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09/997,643	11/29/2001	Richard S. Ohran	14113.79	7417

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EXAMINER	
BRADLEY, MATTHEW A	
ART UNIT	**PAPER NUMBER**
2187	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/997,643	OHRAN, RICHARD S.	
	Examiner	Art Unit	
	Matthew Bradley	2187	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *24-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *24-52* is/are rejected.

7)☒ Claim(s) *38 and 41* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/4/02,2/27/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 4 March 2002 was filed after the mailing date of 29 November 2001. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

The information disclosure statement (IDS) submitted on 27 February 2003 was filed after the mailing date of 29 November 2001. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

Claim 38 is objected to because of the following informalities:

- Lines 3, 5, 6, and 7 state "at least some of the". The Examiner notes that this terminology does not need to be present due to the recitation of 'said'.

Claim 41 is objected to because of the following informalities:

- Line 18 states "changes to the data blocks stored on the mass storage device **to** not change the snapshot copy."

The objections to the claims will not be held in abeyance. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 24-52 are rejected under 35 U.S.C. 102(b) as being anticipated by Armangau (U.S. 6,434,681).

As per independent claim 24, Armangau teaches,

- "receiving information from a user designating a subset of data blocks of the mass storage device to be included in a snapshot copy that is to preserve the designated subset of the data blocks as the designated subset existed at a first point in time," (column 6 lines 14-29). *The Examiner notes that Armangau teaches of 'units of data storage' which is representative of the 'blocks' that are disclosed in the instant claim.*
- "as the data blocks at the mass storage device change after the first point in time, identifying the data blocks of the designated subset that change at the mass storage device," (column 13 lines 58-65).
- "preserving a copy of the data blocks of the designated subset that change, wherein the copy of the changed data blocks represents an original copy of said data blocks of the designated subset prior to changing," (column 6 lines 42-47 and lines 50-56).

- "providing access to the snapshot copy of the designated subset of the data blocks," (column 8 lines 33-37).

As per dependent claim 25, Armangau teaches, "wherein the snapshot copy is created without disrupting user access to the computer system to the extent that users are able to continue to issue I/O requests to the mass storage device as the snapshot is created," (column 6 lines 48-50). *The Examiner notes that Armangau teaches a system that is, 'constructed in such a way that the host can continue to access the primary storage concurrently with the copying process.' This 'access' would involve 'I/O' requests as disclosed in the instant claim.*

As per dependent claim 26, Armangau teaches, "wherein the act of identifying the data blocks of the designated subset that change at the mass storage device comprises the act of maintaining a table that includes an entry for at least the data blocks of the designated subset that have changed after the first point in time," (column 13 lines 58-65 and elements 127-128 of Figure 7b). *The Examiner notes that Armangau teaches an equivalent to the disclosure of 'table' in the instant claim with the recitation of 'bit map'.*

As per dependent claim 27, Armangau teaches, "further comprising the act of maintaining the snapshot copy as a backup of the designated subset of the data blocks as the designated subset existed at the first point in time," (column 8 lines 15-19). *The Examiner notes that Armangau teaches the feature of containing 'more than one version of backup data.' This feature of more than one version, allows the first 'snapshot copy' to be a copy 'as the designated subset existed at the first point in time'.*

As per dependent claim 28, Armangau teaches, "further comprising the act of restoring the designated subset of data using the snapshot copy after experiencing data loss at the mass storage system after the first point in time," (column 8 lines 33-37).

As per dependent claim 29, Armangau teaches,

- "the preserved copy of the changed data blocks for those data blocks of the designated subset that have changed," (column 8 lines 15-19). *The Examiner notes that as discussed supra, the secondary storage system of Armangau can contain 'more than one version of backup data.' With respect to the instant claim, the Examiner notes that the 'preserved copy of the changed data blocks' would be a 'version' as taught by Armangau.*
- "original copies of those data blocks of the designated subset of the data blocks that have not changed after the first point in time." (column 8 lines 15-19). *The Examiner notes that as discussed supra, the secondary storage system of Armangau can contain 'more than one version of backup data.' With respect to the instant claim, the Examiner notes that the 'original copies of those data blocks' would be a 'version' as taught by Armangau.*

As per dependent claim 30, Armangau teaches,

- "further comprising the act of creating a second snapshot copy of the designated subset of the data blocks as the designated subset existed at a second point in time," (column 8 lines 15-19). *The Examiner notes that Armangau teaches the feature of containing 'more than one version of*

backup data.' This feature of more than one version, allows the second 'snapshot copy' to be a copy 'as the designated subset existed at a second point in time'.

- "as the data blocks at the mass storage device change after the second point in time, and in response to the information, identifying the data blocks of the designated subset that change at the mass storage device," (column 13 lines 58-65 and elements 127-128 of Figure 7b).
- "preserving a copy of the data blocks of the designated subset that change after the second point in time, wherein the copy of the changed data blocks represents an original copy of said data blocks of the designated subset prior to changing after the second point in time;" (column 8 lines 15-19). *The Examiner notes that as discussed supra, the secondary storage system of Armangau can contain 'more than one version of backup data.' With respect to the instant claim, the Examiner notes that the 'data blocks of the designated subset that change after the second point in time' would be a 'version' as taught by Armangau.*
- "providing access to the second snapshot copy of the designated subset of the data blocks, where in the second snapshot copy includes," (column 8 lines 33-37). *The Examiner notes that the 'tag' taught by Armangau would designate and differentiate between the stored versions on the secondary storage device allowing for access to the plurality of versions*

stored on the secondary storage device. Accordingly, the 'tag' allows the system to select the appropriate snapshot copy

- "the preserved copy of the changed data blocks for those data blocks of the designated subset that have changed after the second point in time;" (column 8 lines 15-19). *The Examiner notes that as discussed supra, the secondary storage system of Armangau can contain 'more than one version of backup data.' With respect to the instant claim, the Examiner notes that the 'preserved copy of the changed data blocks' would be a 'version' as taught by Armangau.*
- "original copies of those data blocks of the designated subset of the data blocks that have not changed after the second point in time," (column 8 lines 15-19). *The Examiner notes that as discussed supra, the secondary storage system of Armangau can contain 'more than one version of backup data.' With respect to the instant claim, the Examiner notes that the 'original copies of those data blocks' would be a 'version' as taught by Armangau.*

As per dependent claim 31, Armangau teaches, "wherein the act of providing access to the snapshot copy comprises the act of permitting a user to change data blocks of the snapshot copy, such that the snapshot copy represents a changed version of the designated subset of the data blocks," (Figure 2 item 92 and column 9 lines 35-45). *The Examiner notes that in item 92 of figure 2, Armangau teaches a data link from a system manager to the secondary storage system. This data link, further taught in*

column 9 lines 35-45, allows for 'data storage management' of the secondary storage which would allow for modifications of the copies of data to then be dispersed through items 93 and 94 of figure 2 as needed.

As per dependent claim 32, Armangau teaches, "wherein the act of providing access to the snapshot copy comprises the act of enabling read access to the snapshot copy," (column 12 lines 49-60). *The Examiner notes that the 'restore request' received from the 'front-end data mover computer' would begin the process of transferring data to the requesting computer. Before the data is moved however, a read command must be issued allowing the data mover 'read access' to select the data being requested from the requesting computer.*

As per dependent claim 33, Armangau teaches, "wherein the act of providing access to the snapshot copy is performed while providing ongoing access to the data blocks stored in the mass storage device," (column 10 lines 33-49 and column 11 lines 1-11). *The Examiner notes that the secondary storage system as taught by Armangau, contains cache memory which is linked to the 'back-plane busses'. The cache memory contains data that is frequently requested by user computers. Caching the data into the cache memory and allowing the secondary storage system to access the data via a 'back-plane bus' would allow for continued access to the 'data blocks stored' in the secondary storage system while still allowing for access to the snapshot copy.*

As per dependent claim 34, Armangau teaches, "wherein the act of preserving a copy of the data blocks of the designated subset that change is performed by preserving a copy of the data blocks of the designated subset only in response to a first

change thereof after the first point in time and not in response to any subsequent changes," (column 8 lines 15-19). *The Examiner notes that as discussed supra, the secondary storage system of Armangau can contain 'more than one version of backup data.' With respect to the instant claim, the Examiner notes that the 'copy of the data blocks' would be a 'version' as taught by Armangau*

As per independent claim 35, Armangau teaches,

- "maintaining a snapshot copy of a designated subset of the data blocks stored in the mass storage device, the snapshot copy preserving the designated subset of the data blocks as the designated subset existed at a first point in time, wherein the snapshot copy includes:" (column 8 lines 15-19). *The Examiner notes that Armangau teaches the feature of containing 'more than one version of backup data.' This feature of more than one version, allows the first 'snapshot copy' to be a copy 'as the designated subset existed at the first point in time'.*
- "preserved copies of those data blocks of the designated subset of the data blocks that have changed at the mass storage device after the first point in time," (column 8 lines 15-19). *The Examiner notes that as discussed supra, the secondary storage system of Armangau can contain 'more than one version of backup data.' With respect to the instant claim, the Examiner notes that the 'preserved copies of those changed data blocks' would be a 'version' as taught by Armangau.*

- "original copies of those data blocks of the designated subset of the data blocks that have not changed after the first point in time," (column 8 lines 15-19). *The Examiner notes that as discussed supra, the secondary storage system of Armangau can contain 'more than one version of backup data.' With respect to the instant claim, the Examiner notes that the 'original copies of those data blocks' would be a 'version' as taught by Armangau.*
- "experiencing loss of at least some of the designated subset of the data blocks at the mass storage device after the first point in time; and restoring the designated data blocks of the mass storage device using the snapshot copy," (column 12 lines 49-60). *The Examiner notes that the 'restore request' received from the 'front-end data mover computer' would begin the process of transferring data to the requesting computer. With respect to the instant claim, the restore request would be issued after the requesting computer experienced data loss.*

As per dependent claim 36, Armanagu teaches, "wherein the designated subset has been selected by a user of the computer system," (column 8 lines 33-37).

As per dependent claim 37, Armangau teaches, "wherein the act of restoring the designated data blocks comprises the act of restoring the designated data blocks to the state in which they existed at the first point in time," (Column 8 lines 15 –25 and column 8 lines 33-37). *The Examiner notes that the 'tag' as taught and used by Armangau, would allow the user of the computer system to select the version he or she wishes to*

restore including restoring the 'designated data blocks to the state in which they existed at the first point in time.'

As per dependent claim 38, Armangau teaches, "experiencing a condition that results in corruption of said at least some of the designated data blocks; and prior to the corruption of said at least some of the designated data blocks, preserving a copy of said at least some of the designated subset, wherein the copy of the changed data blocks represents an original copy of said at least some of data blocks," (column 8 lines 15-19). *The Examiner notes that Armangau teaches the feature of containing 'more than one version of backup data.' This feature of more than one version, allows a 'copy of the changed data blocks' representing 'an original copy' to be a copy used for restoration.*

As per dependent claim 39, Armangau teaches,

- "as data blocks are stored in the mass storage device, receiving from the user information that identifies the designated subset of the data blocks selected by the user," (column 8 lines 33-37).
- "as the data blocks at the mass storage device change after the first point in time, and in response to the information, identifying the data blocks of the designated subset that change at the mass storage device;" (column 13 lines 58-65 and elements 127-128 of Figure 7b). *The Examiner notes that Armangau teaches a way to identify data blocks that have changed with the recitation of and use of a 'bit map'.*
- "preserving the copy of the data blocks of the designated subset that change, wherein the copy of the changed data blocks represents an

original copy of said data blocks of the designated subset prior to changing," (column 8 lines 15-19). *The Examiner notes that Armangau teaches the feature of containing 'more than one version of backup data.' This feature of more than one version, allows an 'original copy of said data blocks' to be a copy 'of the designated subset prior to changing'.*

As per dependent claim 40, Armangau teaches, "further comprising the act of maintaining one or more other snapshot copies of the designated subset of the data blocks as they existed at the mass storage device at other points in time after the first point in time," (column 8 lines 15-19). *The Examiner notes that Armangau teaches the feature of containing 'more than one version of backup data.' This feature of more than one version, allows the system to 'maintain one or more other snapshot copies.'*

As per independent claim 41, Armangau teaches,

- "In a computer system having a mass storage device that stores data blocks, a method of providing users access to a snapshot copy of selected data blocks while providing ongoing access to the data blocks stored on the mass storage device," (column 10 lines 33-49 and column 11 lines 1-11). *The Examiner notes that the secondary storage system as taught by Armangau, contains cache memory which is linked to the 'back-plane busses'. The cache memory contains data that is frequently requested by user computers. Caching the data into the cache memory and allowing the secondary storage system to access the data via a 'back-plane bus' would allow for continued access to the 'data blocks stored' in the*

secondary storage system while still allowing for access to the snapshot copy.

- "comprising the acts of: maintaining a snapshot copy of a designated subset of the data blocks stored in the mass storage device, the snapshot copy preserving the designated subset of the data blocks as the designated subset existed at a first point in time wherein the snapshot copy includes:" (column 8 lines 15-19). *The Examiner notes that Armangau teaches the feature of containing 'more than one version of backup data.' This feature of more than one version, allows a first 'snapshot copy' to be a copy 'as the designated subset existed at the first point in time'.*
- "preserved copies of those data blocks of the designated subset of the data blocks that have changed at the mass storage device after the first point in time;" (column 8 lines 15-19). *The Examiner notes that as discussed supra, the secondary storage system of Armangau can contain 'more than one version of backup data.' With respect to the instant claim, the Examiner notes that the 'preserved copies of those changed data blocks' would be a 'version' as taught by Armangau.*
- "original copies of those data blocks of the designated subset of the data blocks that have not changed after the first point in time," (column 8 lines 15-19). *The Examiner notes that as discussed supra, the secondary storage system of Armangau can contain 'more than one version of*

backup data.' With respect to the instant claim, the Examiner notes that the 'original copies of those data blocks' would be a 'version' as taught by Armangau.

- "providing access to the snapshot copy of the designated subset of the data blocks, such that changes to the snapshot copy do not change the data blocks stored on the mass storage device; while providing access to the snapshot copy, providing access to the data blocks stored on the mass storage device, such that changes to the data blocks stored on the mass device to not change the snapshot copy" (Figure 2 item 92 and column 9 lines 35-45). *The Examiner notes that in item 92 of figure 2, Armangau teaches a data link from a system manager to the secondary storage system. This data link, further taught in column 9 lines 35-45, allows for 'data storage management' of the secondary storage. This management would allow for changes to the snapshot copies or to changes of other data blocks so as to not interfere with the snapshot copies.*

As per dependent claim 42, Armangau teaches, "wherein the designated subset is selected by a user of the computer system," (column 8 lines 33-37).

As per dependent claim 43, Armangau teaches, "wherein the act of providing access to the snapshot copy comprises the act of providing write access to the snapshot copy by which the data blocks of the snapshot copy can be changed," (Figure 2 item 92 and column 9 lines 35-45). *The Examiner notes that in item 92 of figure 2,*

Armangau teaches a data link from a system manager to the secondary storage system. This data link, further taught in column 9 lines 35-45, allows for 'data storage management' of the secondary storage. This management would allow for changes to the snapshot copies.

As per dependent claim 44, Armangau teaches, "further comprising the act of maintaining one or more snapshot copies of the designated subset of the data blocks as they existed at the mass storage device at other points in time after the first point in time," (column 8 lines 15-19). *The Examiner notes that Armangau teaches the feature of containing 'more than one version of backup data.' This feature of more than one version, allows the system to perform the act of 'maintaining one or more snapshot copies.'*

As per dependent claim 45, Armangau teaches,

- "as data blocks are stored in the mass storage device, receiving from the user information that identifies the designated subset of the data blocks selected by the user," (column 8 lines 33-37).
- "as the data blocks at the mass storage device change after the first point in time, and in response to the information, identifying the data blocks of the designated subset that change at the mass storage device;" (column 13 lines 58-65 and elements 127-128 of Figure 7b). *The Examiner notes that Armangau teaches a way to identify data blocks that have changed with the recitation of and use of a 'bit map'.*

- "preserving the copy of the data blocks of the designated subset that change, wherein the copy of the changed data blocks represents an original copy of said data blocks of the designated subset prior to changing," (column 8 lines 15-19). *The Examiner notes that Armangau teaches the feature of containing 'more than one version of backup data.' This feature of more than one version, allows an 'original copy of said data blocks' to be a copy 'of the designated subset prior to changing'.*

As per independent claim 46, Armangau teaches,

- "maintaining a first snapshot copy of a first designated subset of the data blocks stored in the mass storage device, the snapshot copy preserving the first designated subset of the data blocks as the first designated subset existed at a first point in time, wherein the first snapshot copy includes," (column 8 lines 15-19). *The Examiner notes that Armangau teaches the feature of containing 'more than one version of backup data.' This feature of more than one version, allows a first 'snapshot copy' to be a copy 'as the designated subset existed at the first point in time'.*
- "preserved copies of those data blocks of the subset of first designated data blocks that have changed at the mass storage device after the first point in time; and original copies of those data blocks of the first designated subset of the data blocks that have not changed after the first point in time;" (column 8 lines 15-19). *The Examiner notes that as discussed supra, the secondary storage system of Armangau can contain*

'more than one version of backup data.' With respect to the instant claim, the Examiner notes that 'original copies of those data blocks' would be a 'version' as taught by Armangau.

- "maintaining a second snapshot copy of a second designated subset of the data blocks stored in the mass storage device, the snapshot copy preserving the second designated subset of the data blocks as the second designated subset existed at a second point in time, wherein the second snapshot copy includes," (column 8 lines 15-19). *The Examiner notes that Armangau teaches the feature of containing 'more than one version of backup data.' This feature of more than one version, allows a second or additional 'snapshot copy' to be a copy 'as the designated subset existed at the second point in time'.*
- "preserved copies of those data blocks of the subset of second designated data blocks that have changed at the mass storage device after the second point in time; and original copies of those data blocks of the second designated subset of the data blocks that have not changed after the second point in time;" (column 8 lines 15-19). *The Examiner notes that as discussed supra, the secondary storage system of Armangau can contain 'more than one version of backup data.' With respect to the instant claim, the Examiner notes that 'preserved copies of those data blocks of the second designated subset of the data blocks' would be a 'version' as taught by Armangau.*

As per dependent claim 47, Armangau teaches, "wherein the first designated subset and the second designated subset are selected by a user of the computer system," (column 8 lines 33-37).

As per dependent claim 48, Armangau teaches, "further comprising the act of providing access to the first snapshot copy of the first designated subset of the data blocks while independently providing access to the data blocks stored on the mass storage device," (column 10 lines 33-49 and column 11 lines 1-11). *The Examiner notes that the secondary storage system as taught by Armangau, contains cache memory which is linked to the 'back-plane busses'. The cache memory contains data that is frequently requested by user computers. Caching the data into the cache memory and allowing the secondary storage system to access the data via a 'back-plane bus' would allow for continued access to the 'data blocks stored' in the secondary storage system while still allowing for access to a snapshot copy.*

As per dependent claim 49, Armangau teaches, "wherein the first period of time is different from the second period of time," (column 8 lines 15-19 and lines 33-37).

As per dependent claim 50, Armangau teaches, "wherein the first designated subset of the data blocks is different from the second designated subset of the data blocks," (column 8 lines 15-19 and column 33-37).

As per dependent claim 51, Armangau teaches, "further comprising the act of maintaining the first and second snapshot copies as backups of the first and second designated subsets of the data blocks, respectively," (column 8 lines 15-25 and lines 33-37).

As per dependent claim 52, Armangau teaches, "further comprising the act of restoring the first designated subset of the data blocks using the first snapshot copy after experiencing data loss at the mass storage system," (column 8 lines 33-37 and column 12 lines 49-60). *The Examiner notes that the 'restore request' received from the 'front-end data mover computer' would begin the process of transferring data to the requesting computer. With respect to the instant claim, the restore request would be issued after the requesting computer experienced data loss. The restore request would contain the 'tag' to ensure the 'first snapshot copy' was the copy being restored.*

Conclusion

The prior art made of record and not relied upon are as follows:

1. U.S. Patent No. 6,678,809 Delaney et al, teaches block level management allowing for multiple write requests to the data volumes.

2. U.S. Patent No. 6,665,779 Polfer et al, teaches an image backup method allowing for individual partitions to be selected for arching opposed to the entire disk.

3. U.S. Patent No. 6,625,623 Midgley et al, teaches a system for backing up data files and making allowances for changes that occur after data has been backed up.

4. U.S. Patent No. 6,618,794 Sicola et al, teaches a system for creating a snapshot copy of data.

5. U.S. Patent No. 6,397,229 Menon et al, teaches a system for backing up and restoring data either as a whole or by portions. Additionally Menon et al teaches management of changes to the backup data through the use of indicators.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew Bradley whose telephone number is (571) 272-8575. The examiner can normally be reached on 7:30-4:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald A. Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CPC/mb

Christian P. Chace
Primary Examiner